AMENDMENTS TO THE CLAIMS

Claims 1-12 (Canceled)

13. (New) A high-frequency signal level detection apparatus comprising:

an AGC circuit for executing an automatic gain control on an intermediate frequency signal obtained by converting a frequency of a received high-frequency signal, using an RFAGC value for controlling a gain of the high-frequency signal and an IFAGC value for controlling a gain of the intermediate frequency signal based on the intermediate frequency signal so that an output level of the intermediate frequency signal is substantially constant; and

detecting means for previously measuring first relational data indicating an RFAGC value relative to an inputted signal level of the received high-frequency signal and second relational data indicating an IFAGC value relative to the inputted signal level of the received high-frequency signal, for measuring the RFAGC value and the IFAGC value when a high-frequency signal to be measured is received, and for detecting the inputted signal level of the received high-frequency signal using the measured first and second relational data based on the measured RFAGC value and IFAGC value,

wherein the received high-frequency signal has a plurality of frequencies, and

wherein said detecting means previously measures a first relational data indicating the RFAGC value relative to the inputted signal level and a second relational data indicating the IFAGC value relative to the inputted signal level using a high-frequency signal having a substantial central frequency among the plurality of frequencies.

14. (New) The high-frequency signal level detection apparatus as claimed in claim 13,

wherein said detecting means detects the inputted signal level of the received high-frequency signal using only the second relational data based on the measured IFAGC value when the gain of the high-frequency signal is a maximum value thereof.

15. (New) The high-frequency signal level detection apparatus as claimed in claim 13,

wherein said detecting means detects the inputted signal level of the received high-frequency signal using only the first relational data based on the measured RFAGC value when the gain of the high-frequency signal is not a maximum value thereof.

16. (New) The high-frequency signal level detection apparatus as claimed in claim 13,

wherein said detecting means detects a first inputted signal level of the received high-frequency signal using the measured first relational data based on the measured RFAGC value, detects a second inputted signal level of the received high-frequency signal using the measured second relational data based on the measured IFAGC value, and detects an average value of the detected first and second inputted signal levels as the inputted signal level of the received high-frequency signal.

17. (New) The high-frequency signal level detection apparatus as claimed in claim 13,

wherein the received high-frequency signal has a plurality of frequencies,

wherein said detecting means previously measures the following parts using two high-frequency signals having a maximum frequency and a minimum frequency among the plurality of frequencies, respectively:

(a) a first part of the first relational data indicating the RFAGC value relative to the inputted signal level of the high-frequency signal having the maximum frequency;

(b) a first part of the second relational data indicating the IFAGC value relative to the inputted signal level of the high-frequency signal having the maximum frequency;

(c) a second part of the first relational data indicating the RFAGC value relative to the inputted signal level of the high-frequency signal having the minimum frequency; and

(d) a second part of the second relational data indicating the IFAGC value relative to the inputted signal level of the high-frequency signal having the minimum frequency,

wherein said detecting means detects a first inputted signal level of the received high-frequency signal using the measured first part of the first relational data based on the measured RFAGC value, detects a second inputted signal level of the received high-frequency signal using the measured first part of the second relational data based on the measured IFAGC value, and detects an average value of the detected first and second inputted signal levels as the inputted signal level of the high-frequency signal having the maximum frequency,

wherein said detecting means detects a third inputted signal level of the received high-frequency signal using the measured second part of the first relational data based on the measured RFAGC value, detects a fourth inputted signal level of the received high-frequency

signal using the measured second part of the second relational data based on the measured IFAGC value, and detects an average value of the detected third inputted signal level and the detected fourth inputted signal level as the inputted signal level of the high-frequency signal having the minimum frequency, and

wherein said detecting means calculates the inputted signal level of the high-frequency signal to be measured using a linear approximation method for linearly approximating the inputted signal level relative to a reception frequency of the high-frequency signal to be measured based on the detected inputted signal level of the high-frequency signal having the maximum frequency and on the detected inputted signal level of the high-frequency signal having the minimum frequency.

18. (New) The high-frequency signal level detection apparatus as claimed in claim 13,

wherein the received high-frequency signal has a plurality of frequencies,

wherein a frequency range including the plurality of frequencies is divided into a plurality of frequency ranges, and

wherein said detecting means previously measures the first and second relational data in each of the divided frequency ranges, and detects the inputted signal level of the received high-frequency signal using the measured first and second relational data corresponding to the frequency range to which the frequency of the high-frequency signal to be measured belongs.

19. (New) The high-frequency signal level detection apparatus as claimed in claim 13,

wherein said detecting means previously measures third relational data, that is a detected error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the detected error being caused, between a case with an interference signal of a further high-frequency signal in the vicinity of the frequency of the high-frequency signal to be measured, and a case with no interference signal thereof, and

wherein said detecting means detects the detected error using the third relational data based on the IFAGC value measured for the high-frequency signal to be measured, and corrects the detected inputted signal level using the detected error.

20. (New) The high-frequency signal level detection apparatus as claimed in claim 13, wherein said detecting means previously measures the following parts:

(a) a first part of third relational data, that is a first detected error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the first detected error being caused, between a first case with interference signals of further high-frequency signals located on both sides of the frequency of the high-frequency signal to be measured, and a case with no interference signal thereof; and

(b) a second part of the third relational data, that is a second detected error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the second detected error being caused, between a second case with an interference signal of further high-frequency signal located on one side of the frequency of the high-frequency signal to be measured, and a case with no interference signal thereof,

wherein said detecting means detects one of the first and second detected errors based on the IFAGC value measured for the high-frequency signal to be measured using one of the first and second parts of the third relational data which respectively correspond to states in which the high-frequency signal to be measured is in the first and second cases, and corrects the detected inputted signal level using the detected error.

21. (New) The high-frequency signal level detection apparatus as claimed in claim 13, wherein said detecting means represents the first relational data and the second relational data by predetermined approximate functions, respectively, and detects the inputted signal level of the received high-frequency signal using the approximate function of the first relational data and the approximate function of the second relational data.

22. (New) The high-frequency signal level detection apparatus as claimed in claim 13, further comprising display means for displaying the inputted signal level detected by said detecting means.

23. (New) A high-frequency signal receiver apparatus, comprising:

a receiver for receiving a high-frequency signal, for converting the received high-frequency signal into an intermediate frequency signal, and for outputting the intermediate frequency signal; and

a high-frequency signal level detection apparatus comprising,

an AGC circuit for executing an automatic gain control on the intermediate frequency signal, using an RFAGC value for controlling a gain of the high-frequency signal and an IFAGC value for controlling a gain of the intermediate frequency signal based on the intermediate frequency signal so that an output level of the intermediate frequency signal is substantially constant; and

detecting means for previously measuring first relational data indicating an RFAGC value relative to an inputted signal level of the received high-frequency signal and second relational data indicating an IFAGC value relative to the inputted signal level of the received high-frequency signal, for measuring the RFAGC value and the IFAGC value when a high-frequency signal to be measured is received, and for detecting the inputted signal level of the received high-frequency signal using the measured first and second relational data based on the measured RFAGC value and IFAGC value,

wherein the received high-frequency signal has a plurality of frequencies, and

wherein said detecting means previously measures a first relational data indicating the RFAGC value relative to the inputted signal level and a second relational data indicating the IFAGC value relative to the inputted signal level using a high-frequency signal having a substantial central frequency among the plurality of frequencies.

24. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said detecting means detects the inputted signal level of the received high-frequency signal using only the second relational data based on the measured IFAGC value when the gain of the high-frequency signal is a maximum value thereof.

25. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said detecting means detects the inputted signal level of the received high-frequency signal using only the first relational data based on the measured RFAGC value when the gain of the high-frequency signal is not a maximum value thereof.

26. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said detecting means detects a first inputted signal level of the received high-frequency signal using the measured first relational data based on the measured RFAGC value, detects a second inputted signal level of the received high-frequency signal using the measured second relational data based on the measured IFAGC value, and detects an average value of the detected first and second inputted signal levels as the inputted signal level of the received high-frequency signal.

27. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein the received high-frequency signal has a plurality of frequencies,

wherein said detecting means previously measures the following parts using two high-frequency signals having a maximum frequency and a minimum frequency among the plurality of frequencies, respectively:

(a) a first part of the first relational data indicating the RFAGC value relative to the inputted signal level of the high-frequency signal having the maximum frequency;

(b) a first part of the second relational data indicating the IFAGC value relative to the inputted signal level of the high-frequency signal having the maximum frequency;

(c) a second part of the first relational data indicating the RFAGC value relative to the inputted signal level of the high-frequency signal having the minimum frequency; and

(d) a second part of the second relational data indicating the IFAGC value relative to the inputted signal level of the high-frequency signal having the minimum frequency,

wherein said detecting means detects a first inputted signal level of the received high-frequency signal using the measured first part of the first relational data based on the measured RFAGC value, detects a second inputted signal level of the received high-frequency signal using the measured first part of the second relational data based on the measured IFAGC value, and

detects an average value of the detected first and second inputted signal levels as the inputted signal level of the high-frequency signal having the maximum frequency,

wherein said detecting means detects a third inputted signal level of the received high-frequency signal using the measured second part of the first relational data based on the measured RFAGC value, detects a fourth inputted signal level of the received high-frequency signal using the measured second part of the second relational data based on the measured IFAGC value, and detects an average value of the detected third inputted signal level and the detected fourth inputted signal level as the inputted signal level of the high-frequency signal having the minimum frequency, and

wherein said detecting means calculates the inputted signal level of the high-frequency signal to be measured using a linear approximation method for linearly approximating the inputted signal level relative to a reception frequency of the high-frequency signal to be measured based on the detected inputted signal level of the high-frequency signal having the maximum frequency and on the detected inputted signal level of the high-frequency signal having the minimum frequency.

28. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein the received high-frequency signal has a plurality of frequencies,

wherein a frequency range including the plurality of frequencies is divided into a plurality of frequency ranges, and

wherein said detecting means previously measures the first and second relational data in each of the divided frequency ranges, and detects the inputted signal level of the received high-frequency signal using the measured first and second relational data corresponding to the frequency range to which the frequency of the high-frequency signal to be measured belongs.

29. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said detecting means previously measures third relational data, that is a detected error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the detected error being caused, between a case with an interference signal of a further high-frequency signal in the vicinity of the

frequency of the high-frequency signal to be measured, and a case with no interference signal thereof, and

wherein said detecting means detects the detected error using the third relational data based on the IFAGC value measured for the high-frequency signal to be measured, and corrects the detected inputted signal level using the detected error.

30. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said detecting means previously measures the following parts:

(a) a first part of third relational data, that is a first detected error in the IFAGC value of the second relational data indicating the, IFAGC value relative to the inputted signal level of the received high-frequency signal, the first detected error being caused, between a first case with interference signals of further high-frequency signals located on both sides of the frequency of the high-frequency signal to be measured, and a case with no interference signal thereof; and

(b) a second part of the third relational data, that is a second detected error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the second detected error being caused, between a second case with an interference signal of further high-frequency signal located on one side of the frequency of the high-frequency signal to be measured, and a case with no interference signal thereof

wherein said detecting means detects one of the first and second detected errors based on the IFAGC value measured for the high-frequency signal to be measured using one of the first and second parts of the third relational data which respectively correspond to states in which the high-frequency signal to be measured is in the first and second cases, and corrects the detected inputted signal level using the detected error.

31. (New) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said detecting means represents the first relational data and the second relational data by predetermined approximate functions, respectively, and detects the inputted signal level of the received high-frequency signal using the approximate function of the first relational data and the approximate function of the second relational data.

32. (New) The high-frequency signal receiver apparatus as claimed in claim 23, further comprising display means for displaying the inputted signal level detected by said detecting means.